

We claim:

- 1 1. An endovascular apparatus for developing an inflammatory
2 response in a body cavity with cellular manipulation comprising:
3 a separable implant comprised at least in part of at least one
4 biocompatible and bioabsorbable polymer; and
5 an endovascular placement device associated with said separable implant
6 adapted to dispose said implant into said body cavity.
- 1 2. The apparatus of claim 1 wherein said implant further is
2 comprised at least in part of a noncollagenous protein.
- 1 3. The apparatus of claim 1 wherein said implant further is
2 comprised at least in part of a growth factor.
- 1 4. The apparatus of claim 3 wherein said implant further is
2 comprised at least in part of a one selected from the group of VEGF, b-FGF,
3 TGF, PDGF or mixtures thereof.
- 1 5. The apparatus of claim 3 wherein said implant further is
2 comprised at least in part of a basic fibroblast growth factor.

1 6. The apparatus of claim 4 wherein said implant further is
2 comprised at least in part of a mixture of said vascular endothelial growth factor
3 and a basic fibroblast growth factor.

1 7. The apparatus of claim 1 wherein said biocompatible and
2 bioabsorbable polymer is at least one polymer selected from the group consisting
3 of polyglycolic acid, poly~glycolic acid/poly-L-lactic acid copolymers,
4 polycaprolactive, polyhydroxybutyrate/hydroxyvalerate copolymers, poly-L-
5 lactide, polydioxanone, polycarbonates, and polyanhydrides.

1 8. The apparatus of claim 2 wherein said biocompatible and
2 bioabsorbable protein is at least one protein selected from the group consisting
3 of fibrinogen, fibronectin, vitronectin, laminin, and gelatin.

1 9. The apparatus of claim 1 wherein a radio-opaque material is
2 disposed on said implant.

1 10. The apparatus of claim 1 wherein said implant composed of
2 a radio-opaque material, and wherein said biocompatible and bioabsorbable
3 polymer or protein is disposed thereon.

1 11. The apparatus of claim 1 wherein said biocompatible and
2 bioabsorbable polymer promotes cellular manipulation, controlled inflammatory
3 response and vascular healing.

1 12. A method for creating an inflammatory response in a body
2 cavity comprising:
3 providing a separable implant comprised at least in part of at least one
4 biocompatible and bioabsorbable polymer; and
5 disposing said separable implant into said body cavity.

1 13. The method of claim 12 further providing said implant with a
2 noncollagenous protein.

1 14. The method of claim 12 further providing said implant with a
2 growth factor.

1 15. The method of claim 14 wherein providing said implant with
2 a growth factor comprises providing said implant with a vascular endothelial
3 growth factor.

1 16. The method of claim 14 wherein providing said implant with
2 a growth factor comprises providing said implant with a basic fibroblast growth
3 factor.

1 17. The method of claim 15 wherein providing said implant with
2 a growth factor comprises providing said implant with a mixture of said vascular
3 endothelial growth factor and a basic fibroblast growth factor.

1 18. The method of claim 12 wherein providing said separable
2 implant comprised with said biocompatible and bioabsorbable polymer comprises
3 providing said implant with at least one polymer selected from the group
4 consisting of polyglycolic acid, poly~glycolic acid/poly-L-lactic acid copolymers,
5 polycaprolactone, polyhydroxybutyrate/hydroxyvalerate copolymers, poly-L-
6 lactide, polydioxanone, polycarbonates, and polyanhydrides.

1 19. The method of claim 13 wherein providing said separable
2 implant comprised with said biocompatible and bioabsorbable protein comprising
3 providing at least one protein selected from the group consisting of fibrinogen,
4 fibronectin, vitronectin, laminin, and gelatin.

1 20. The method of claim 12 wherein providing said implant
2 provides a implant composed of said biocompatible and bioabsorbable polymer
3 with a radio-opaque material is disposed thereon.

1 21. The method of claim 12 wherein providing said implant
2 provides a implant composed of a radio-opaque material with said biocompatible
3 and bioabsorbable polymer is disposed thereon.

1 22. The apparatus of claim 1 where said biocompatible and
2 bioabsorbable polymer does not elicit intense chronic foreign body reaction.

1 23. The apparatus of claim 1 where said endovascular
2 placement device is used to dispose said implant at an implantation site and
3 where said biocompatible and bioabsorbable polymer is gradually absorbed and
4 does not leave residua in said implantation site.

1 24. The apparatus of claim 1 where said biocompatible and
2 bioabsorbable polymer is faster degrading and provides a stronger inflammatory
3 reaction than metal coils.

1 25. The apparatus of claim 1 where said biocompatible and
2 bioabsorbable polymer has a selected composition to provide a controlled
3 degradation time to thereby control intravascular inflammatory reactions.

1 26. The apparatus of claim 1 where said biocompatible and
2 bioabsorbable polymer regenerates tissue through the interaction of immunologic
3 cells.

1 27. The apparatus of claim 1 where said biocompatible and
2 bioabsorbable polymer stimulates cellular infiltration and proliferation in the
3 process of degradation to accelerate fibrosis.

1 28. The apparatus of claim 1 where said biocompatible and
2 bioabsorbable polymer accelerates fibrosis within an aneurysm to more strongly
3 anchor said implant than does metal coils.

1 29. The apparatus of claim 1 where said biocompatible and
2 bioabsorbable polymer is characterized by generating more connective tissue
3 and a less unorganized clot than metal coils so that an aneurysm in which said
4 implant is disposed is more resistant to a water hammer effect of pulsatile blood
5 than when treated by metal coils.

1 30. The apparatus of claim 1 where said biocompatible and
2 bioabsorbable polymer restricts coil compaction by accelerated scar formation.

1 31. The apparatus of claim 1 where said biocompatible and
2 bioabsorbable polymer restricts aneurysm recanalization by accelerated scar
3 formation.

1 32. The apparatus of claim 1 where said biocompatible and
2 bioabsorbable polymer induces organized connective tissue to fill an aneurysm
3 and to retract said aneurysm over time due to maturation of collagen fibers to
4 reduce aneurysm size and decrease aneurysm compression on brain
5 parenchyma or cranial nerves.

1 33. The apparatus of claim 1 where said biocompatible and
2 bioabsorbable polymer is less thrombogenic than metal coils and accelerates
3 aneurysm healing with less thrombogenicity.

1 34. The apparatus of claim 1 where said biocompatible and
2 bioabsorbable polymer comprises a mixture of polyglycolic/ poly-L-lactic acid
3 copolymers with a 90/10 molar ratio of glycolic to L-lactic acid.

1 35. The apparatus of claim 1 where said implant is a hybrid
2 bioactive coil.

1 36. The apparatus of claim 35 where said hybrid bioactive coil is
2 a composite of said biocompatible and bioabsorbable polymer and an inert
3 biocompatible coil.

1 37. The apparatus of claim 36 where said inert biocompatible
2 coil is a platinum coil.

1 38. The apparatus of claim 36 where said composite of said
2 biocompatible and bioabsorbable polymer and an inert biocompatible coil
3 comprises a layer of said biocompatible and bioabsorbable polymer on said inert
4 biocompatible coil.

1 39. The apparatus of claim 36 where said composite of said
2 biocompatible and bioabsorbable polymer and an inert biocompatible coil
3 comprises threads of said biocompatible and bioabsorbable polymer attached to
4 said inert biocompatible coil.